

## SEQUENCE LISTING

<110> Richards, Nigel Gordon John  
 Chang, Christopher Harry  
 Peck, Ammon B.

<120> Polynucleotides Encoding Oxalate Decarboxylase from *Aspergillus*  
*Niger* and Methods of Use

<130> UF-314XC1

<150> US 60/404,892

<151> 2002-08-20

<160> 9

<170> PatentIn version 3.2

<210> 1

<211> 1397

<212> DNA

<213> *Aspergillus niger*

<400> 1

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ccgtgagcgc cagaaccccg acatgctccg tctccgagc accgaccatg gcaacatgcc      240
gaacatgcgg tggagctttg ctgactcca cattcgcatg gaggtaagcc cttcgagagt      300
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<212> PRT
<213> Aspergillus niger

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<400> 3

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20          25          30
Val Asp Ala Ile Gly Glu Gly His Glu Pro Leu Pro Trp Arg Met Gly
35          40          45
Asp Gly Ala Thr Ile Met Gly Pro Arg Asn Lys Asp Arg Glu Arg Gln
50          55          60
Asn Pro Asp Met Leu Arg Pro Pro Ser Thr Asp His Gly Asn Met Pro
65          70          75          80
Asn Met Arg Trp Ser Phe Ala Asp Ser His Ile Arg Ile Glu Glu Gly
85          90          95
Gly Trp Thr Arg Gln Thr Thr Val Arg Glu Leu Pro Thr Ser Arg Glu
100         105         110
Leu Ala Gly Val Asn Met Arg Leu Asp Glu Gly Val Ile Arg Glu Leu
115         120         125
His Trp His Arg Glu Ala Glu Trp Ala Tyr Val Leu Ala Gly Arg Val
130         135         140
Arg Val Thr Gly Leu Asp Leu Glu Gly Gly Ser Phe Ile Asp Asp Leu
145         150         155         160
Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser Leu
165         170         175
Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp Asp

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180	185	190
Gly Asn Phe Ser Glu Glu Ser Thr Phe Leu Leu Thr Asp Trp Ile Ala		
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His Thr Pro Lys Ser Val Leu Ala Gly Asn Phe Arg Met Arg Pro Gln		
210	215	220
Thr Phe Lys Asn Ile Pro Pro Ser Glu Lys Tyr Ile Phe Gln Gly Ser		
225	230	235
Val Pro Asp Ser Ile Pro Lys Glu Leu Pro Arg Asn Phe Lys Ala Ser		
245	250	255
Lys Gln Arg Phe Thr His Lys Met Leu Ala Gln Glu Pro Glu His Thr		
260	265	270
Ser Gly Gly Glu Val Arg Ile Thr Asp Ser Ser Asn Phe Pro Ile Ser		
275	280	285
Lys Thr Val Ala Ala Ala His Leu Thr Ile Asn Pro Gly Ala Ile Arg		
290	295	300
Glu Met His Trp His Pro Asn Ala Asp Glu Trp Ser Tyr Phe Lys Arg		
305	310	315
Gly Arg Ala Arg Val Thr Ile Phe Ala Ala Glu Gly Asn Ala Arg Thr		
325	330	335
Phe Asp Tyr Val Ala Gly Asp Val Gly Ile Val Pro Arg Asn Met Gly		
340	345	350
His Phe Ile Glu Asn Leu Ser Asp Asp Glu Glu Val Glu Val Leu Glu		
355	360	365
Ile Phe Arg Ala Asp Arg Phe Arg Asp Phe Ser Leu Phe Gln Trp Met		
370	375	380
Gly Glu Thr Pro Gln Arg Met Val Ala Glu His Val Phe Lys Asp Asp		
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Pro Asp Ala Ala Arg Glu Phe Leu Lys Ser Val Glu Ser Gly Glu Lys		
405	410	415
Asp Pro Ile Arg Ser Pro Ser Glu		
420		

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 <213> Aspergillus niger  
  
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 20 25 30  
 Gly Asp Gly Ala Thr Ile Met Gly Pro Arg Asn Lys Asp Arg Glu Arg  
 35 40 45  
 Gln Asn Pro Asp Met Leu Arg Pro Pro Ser Thr Asp His Gly Asn Met  
 50 55 60  
 Pro Asn Met Arg Trp Ser Phe Ala Asp Ser His Ile Arg Ile Glu Glu  
 65 70 75 80  
 Gly Gly Trp Thr Arg Gln Thr Thr Val Arg Glu Leu Pro Thr Ser Arg  
 85 90 95  
 Glu Leu Ala Gly Val Asn Met Arg Leu Asp Glu Gly Val Ile Arg Glu  
 100 105 110  
 Leu His Trp His Arg Glu Ala Glu Trp Ala Tyr Val Leu Ala Gly Arg  
 115 120 125  
 Val Arg Val Thr Gly Leu Asp Leu Glu Gly Gly Ser Phe Ile Asp Asp  
 130 135 140  
 Leu Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser  
 145 150 155 160  
 Leu Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp  
 165 170 175  
 Asp Gly Asn Phe Ser Glu Glu Ser Thr Phe Leu Leu Thr Asp Trp Ile  
 180 185 190  
 Ala His Thr Pro Lys Ser Val Leu Ala Gly Asn Phe Arg Met Arg Pro  
 195 200 205  
 Gln Thr Phe Lys Asn Ile Pro Pro Ser Glu Lys Tyr Ile Phe Gln Gly  
 210 215 220  
 Ser Val Pro Asp Ser Ile Pro Lys Glu Leu Pro Arg Asn Phe Lys Ala  
 225 230 235 240  
 Ser Lys Gln Arg Phe Thr His Lys Met Leu Ala Gln Glu Pro Glu His  
 245 250 255  
 Thr Ser Gly Gly Glu Val Arg Ile Thr Asp Ser Ser Asn Phe Pro Ile  
 260 265 270  
 Ser Lys Thr Val Ala Ala Ala His Leu Thr Ile Asn Pro Gly Ala Ile  
 275 280 285  
 Arg Glu Met His Trp His Pro Asn Ala Asp Glu Trp Ser Tyr Phe Lys

290	295	300
Arg Gly Arg Ala Arg Val Thr Ile Phe Ala Ala Glu Gly Asn Ala Arg		
305	310	315 320
Thr Phe Asp Tyr Val Ala Gly Asp Val Gly Ile Val Pro Arg Asn Met		
	325	330 335
Gly His Phe Ile Glu Asn Leu Ser Asp Asp Glu Glu Val Glu Val Leu		
	340	345 350
Glu Ile Phe Arg Ala Asp Arg Phe Arg Asp Phe Ser Leu Phe Gln Trp		
	355	360 365
Met Gly Glu Thr Pro Gln Arg Met Val Ala Glu His Val Phe Lys Asp		
	370	375 380
Asp Pro Asp Ala Ala Arg Glu Phe Leu Lys Ser Val Glu Ser Gly Glu		
385	390	395 400
Lys Asp Pro Ile Arg Ser Pro Ser Glu		
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 <213> Artificial sequence

<220>  
 <223> PCR primer

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27

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 <212> PRT  
 <213> Aspergillus niger

<400> 7

Phe Gln Asp Lys Pro Phe Thr Pro Asp His Arg  
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<210> 8  
 <211> 4  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Anticipated N-terminal sequence of oxalate decarboxylase of  
 Aspergillus niger

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<210> 9  
 <211> 385  
 <212> PRT  
 <213> Bacillus subtilis

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 20 25 30

Asp Met Leu Val Pro Pro Glu Thr Asp His Gly Thr Val Ser Asn Met  
 35 40 45

Lys Phe Ser Phe Ser Asp Thr His Asn Arg Leu Glu Lys Gly Gly Tyr  
 50 55 60

Ala Arg Glu Val Thr Val Arg Glu Leu Pro Ile Ser Glu Asn Leu Ala  
 65 70 75 80

Ser Val Asn Met Arg Leu Lys Pro Gly Ala Ile Arg Glu Leu His Trp  
 85 90 95

His Lys Glu Ala Glu Trp Ala Tyr Met Ile Tyr Gly Ser Ala Arg Val  
 100 105 110

Thr Ile Val Asp Glu Lys Gly Arg Ser Phe Ile Asp Asp Val Gly Glu  
 115 120 125

Gly Asp Leu Trp Tyr Phe Pro Ser Gly Leu Pro His Ser Ile Gln Ala  
 130 135 140

Leu Glu Glu Gly Ala Glu Phe Leu Leu Val Phe Asp Asp Gly Ser Phe  
 145 150 155 160

Ser Glu Asn Ser Thr Phe Gln Leu Thr Asp Trp Leu Ala His Thr Pro  
 165 170 175  
 Lys Glu Val Ile Ala Ala Asn Phe Gly Val Thr Lys Glu Glu Ile Ser  
 180 185 190  
 Asn Leu Pro Gly Lys Glu Lys Tyr Ile Phe Glu Asn Gln Leu Pro Gly  
 195 200 205  
 Ser Leu Lys Asp Asp Ile Val Glu Gly Pro Asn Gly Glu Val Pro Tyr  
 210 215 220  
 Pro Phe Thr Tyr Arg Leu Leu Glu Gln Glu Pro Ile Glu Ser Glu Gly  
 225 230 235 240  
 Gly Lys Val Tyr Ile Ala Asp Ser Thr Asn Phe Lys Val Ser Lys Thr  
 245 250 255  
 Ile Ala Ser Ala Leu Val Thr Val Glu Pro Gly Ala Met Arg Glu Leu  
 260 265 270  
 His Trp His Pro Asn Thr His Glu Trp Gln Tyr Tyr Ile Ser Gly Lys  
 275 280 285  
 Ala Arg Met Thr Val Phe Ala Ser Asp Gly His Ala Arg Thr Phe Asn  
 290 295 300  
 Tyr Gln Ala Gly Asp Val Gly Tyr Val Pro Phe Ala Met Gly His Tyr  
 305 310 315 320  
 Val Glu Asn Ile Gly Asp Glu Pro Leu Val Phe Leu Glu Ile Phe Lys  
 325 330 335  
 Asp Asp His Tyr Ala Asp Val Ser Leu Asn Gln Trp Leu Ala Met Leu  
 340 345 350  
 Pro Glu Thr Phe Val Gln Ala His Leu Asp Leu Gly Lys Asp Phe Thr  
 355 360 365  
 Asp Val Leu Ser Lys Glu Lys His Pro Val Val Lys Lys Lys Cys Ser  
 370 375 380  
 Lys  
 385